

**Amendment to the Claims:**

This listing of claims will replace all versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method, comprising:  
receiving a power signal from a power input;  
receiving a data signal from a data input;  
receiving a primary communication signal;  
sending a discovery signal to a network device;  
receiving a discovery response from a network device; and  
upon receipt of the discovery response, concurrently transferring the power signal, the primary communication signal, and the data signal on a shared medium to the network device.
2. (Original) The method as set forth in claim 1 further comprising the step of modulating the data signal in a manner interoperable with the power signal.
3. (Original) The method as set forth in claim 1 further comprising the step of receiving a second data signal.
4. (Original) The method as set forth in claim 3 further comprising the step of multiplexing the data signal and the second data signal for transmission on the shared medium.
5. (Currently Amended) The method as set forth in claim 3 further comprising the step of concurrently transferring the second data signal with the power signal, the primary communication signal, and data signal on the shared medium.
6. (Currently Amended) The method as set forth in claim 1 further comprising the steps of:  
receiving an Ethernet data signal;  
converting the Ethernet data signal into a bit-stream second data signal; and

concurrently transferring the second data signal on the shared medium with the power signal, the primary communication signal, and the data signal.

7. (Original) The method as set forth in claim 6 further comprising the step of multiplexing the data signal and the second data signal for transmission on the shared medium.

8. (Currently Amended) A method, comprising:  
~~generating-sending~~ a discovery request signal to determine the presence of a network device capable of accepting power over a network;  
receiving a discovery response signal from the network device;  
receiving a primary communication signal;  
receiving a data signal from a data input;  
receiving a power signal from a power input;  
concurrently transferring the data signal and the primary communication signal to the network device; and  
upon receipt of the discovery response signal, transferring the power signal to the network device;  
wherein the power signal, the primary communication signal, and data signal are transferred on a shared medium to the network device.

9. (Original) The method as set forth in claim 8 further comprising the steps of:  
receiving an Ethernet data signal from an Ethernet input.  
converting the Ethernet data signal into a second data signal; and  
concurrently transferring the second data signal to the network device.

10. (Currently Amended) An apparatus ~~for concurrently transmitting power and data signals to a network device on a shared medium~~, comprising:  
a power input for ~~admitting the~~ receiving a power signal ~~into the apparatus~~;  
a primary communication input for receiving a primary communication signal;  
a data input for admitting ~~[[the]] a data signal into the apparatus~~; and

means for modulating the data signal with the power signal where the data signal, the primary communication signal, and the power signal are ~~simultaneously-concurrently~~ transmitted on ~~[[the]]~~ a shared medium to the network device.

11. (Original) The apparatus set forth in claim 10 wherein the means for modulating is a frequency shift keying scheme.

12. (Original) The apparatus set forth in claim 10 wherein the data is serial control data.

13. (Original) The apparatus set forth in claim 10 wherein the data is Ethernet data and further including means to convert the Ethernet data to serial bit-stream data.

14. (Original) The apparatus set forth in claim 13 wherein the means to convert is a micro terminal server.

15. (Currently Amended) The apparatus as set forth in claim 10 further comprising:  
a second data input for admitting a second data signal into the apparatus;  
a multiplexer to combine the data signal and second data signal for transmission on the shared medium; and

means for modulating the second data signal with the data signal and the power signal where the data signal, second data signal, the primary communication signal, and the power signal are ~~simultaneously-concurrently~~ transmitted on the shared medium.

16. (Original) The apparatus set forth in claim 15 wherein the means for modulating is a modem.

17. (Original) The apparatus of claim 10 wherein the power signal is sourced from a DC power source.

18. (Original) The apparatus of claim 10 wherein the data input comprises an RJ-45 jack, wherein the RJ-45 jack connects the data input to a network.

19. (Original) The apparatus of claim 18 wherein the RJ-45 jack further includes any necessary transformers for impedance matching, isolation, and noise rejection.

20. (Original) The apparatus set forth in claim 10 further including sensing circuits which detect whether the network device connected to the network port requires power.

21. (Original) The apparatus of claim 20 wherein the sensing circuits require power and wherein the sensing circuits couple power and data signals and transmit them to the network device on the shared medium.

22. (Original) The apparatus of claim 20 wherein the sensing circuits detect that the network device does not require power and wherein the sensing circuits allow for passive transmission of data signals only.

23. (Currently Amended) ~~[[A]] An apparatus for concurrently providing power and data signals to at least one network device, comprising:~~

means adapted for supplying power for internal circuitry via power signals produced by a power supply;

means adapted for receiving a primary communication signal for the device;

means adapted for receiving data signals for the device;

means adapted for coupling the power signals to the data signals on a shared medium;  
and

means adapted for concurrently transmitting the coupled signals and the primary communication signal to at least one network port via the shared medium;

wherein the network device receives ~~[[both]]~~ data, primary communication, and power signals from the network port.

24. (Original) The apparatus of claim 23 wherein the data input includes an RJ-45 jack for supplying data signals to the apparatus.

25. (Original) The apparatus of claim 24 further comprising means for detecting the presence of the at least one network device.

26. (Previously Presented) The method of claim 1, further comprising:  
receiving a second data signal for the network device; and  
transferring the second data signal for the network device on a second medium.

27. (Previously Presented) The method of claim 26, wherein the second data signal is a primary Ethernet data signal.

28. (Previously Presented) The apparatus of claim 10, further comprising:  
a Primary Ethernet Input configured to receive Ethernet primary communication signals;  
and  
a second communications medium coupling the Primary Ethernet Input to the network device.

29. (Previously Presented) The apparatus of claim 28, wherein the shared medium comprises a first set of pairs of conductors and the second communications medium comprises a second set of pairs of conductors.

30. (New) The method of claim 1 wherein the data signal is an out of band communication signal.

31. (New) The method of claim 1 wherein:  
the shared medium is a multi-conductor cable;  
the data and power signals are sent over an unused pair of conductors; and  
the primary communication signal is sent over a used pair of conductors.

32. (New) The apparatus of claim 10, further comprising:  
a second primary communication input for receiving a second primary communication signal;

a first output coupled on a shared medium to the network device; and  
a second output coupled on a shared medium to the network device;  
wherein the primary communication signal is provided to the network device on the first output; and  
wherein the means for modulating provides the power signal, data signal and second primary communication signal on the second output.

33. (New) The apparatus of claim 32, further comprising:  
a discovery signal generator; and  
a discovery signal detector;  
wherein the discover signal generator is responsive to send a discovery signal to the network device through the means for modulating on the second output; and  
wherein the discovery signal detector is configured to receive a discovery response signal that is responsive to the discovery signal via the means for modulating; and  
wherein the means for modulating is responsive to provide the power signal to the network device after receiving the discover response signal.